Web Based Staff Management System

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Abstract

Staff record plays a significant role in an organization as it provides information needed to manage their employee performance. Many institute particularly the schools and colleges are still using the conventional methods which are merely paper-based to record the data of their employees, this often result in downright, waste of time in generating reports or searching for employee records and loss or damage of files. These inadequacies in the conventional method are characteristically eluded for the justification in developing a computer-based SMS; as it creates and maintains the database of staff records. This paper discusses the development of computer-based system using JSP while the database is designed using MySQL. With this new system in place, it will provide a dependable report of staff profile in support of management, planning and decision-making. It will also accelerate the most time consuming aspect of the institute which is processing and maintaining accurate staff information, their leaves and provide ways to access employee records and handle their events efficiently.

Keywords: Head of Department, Java Server Pages, Short Message Service, Staff Management System

I. INTRODUCTION

The title of the project is “Staff Management System”. SMS is defined as an application-based on Intranet that aims all the levels of management providing information within an institute. The goal of staff records management is to ensure that the complete and comprehensive employment history of each employee is readily available for as long as it is needed. Other key objectives of SMS are to support transparency and organizational accountability and to enable accurate audits by creating and protecting SMS records as reliable evidence(Griffin and Hoyle 2009) and maintains a database on employment status, educational background, staff information, event records, leave credits on sick and vacation and also generate reports (Engr. Mosud Y. Olumoye Nov,2013 ).

A. Problem Statement

The idea of SMS mainly aims to maintain the database of the employees working in an institute with their profile, leaves and reports with a facility to edit and update it. The SMS project facilitates user as per their hierarchy and grants privilege to them accordingly. Our Project aims in designing SMS which could effectively maintain a database which has the details(profile) of the staff such as their name, unique id, image, designation, date of joining, qualification and certification, journals published etc. SMS is a well detail processing which provides updated records of the employees also accumulated leaves. SMS allows the users to register basic data in a very simple and easy way and the admin can access the stored, analysis and then generate the customize report.

B. Problem Discussion

The SMS should consist of an application program, on one hand, and database (repository of data) on the other. The program should perform basic operations upon the database as retrieving, inserting, updating and deleting data. Any additional functionality is a goal of further module development.
The logical database model (tables, their content and relationships between them) should respond to given task and cover the basic requirements. The interface of the program should be user-friendly. Both controls and forms should logically and functionally be related with the program and fully respond to the structure of the database.

II. EXISTING SYSTEM

Staff records play a significant role in the organization as it provides information needed to manage their employee performance. Many organizations still utilizing the ordinary methods which are merely paper based to record the data of their employees, this often results in downright waste of time in generating reports or searching for employee’s records and loss or damage of files. It is also an arduous task for organizations as it is an expensive process. In existing Staff Management System different module such as leave application and notice boards employees are still using Paper-pen method for applying leaves and also for evaluating the performances of employees they make use of evaluation form and all this increases paper work, and consumes lot of time.

III. SYSTEM ARCHITECTURE

The proposed system is a web based application with two users 1. Staff and 2. Head Of Department. The data of the entire system will be handled by MySQL database. PHP Admin of XAMMP Apache which is an open source software written in PHP is used to handle the administration of MySQL over the World Wide Web. It also supports wide range of MySQL Operations. Apache Tomcat server is used in our system. It is a Web server and a Servlet container. It implements the java Servlet and java server pages. It provides a “pure java” HTTP server environment for java code to run.

The different modules in the staff home page are: Profile, Leave Application, Dashboard and Performance Analysis. The different modules in the HOD home page are: Profile, Leave Management, Customized Report, Dashboard and Performance Analysis. Whenever a user logs in into the system the login page will be provided where the Staff and HOD has to first make themselves registered and then they can login into the system. HOD once logged in will go the HOD home page and the staff will be directed to the staff home page. The Staff and HOD can fill the entire profile details like Personal, Bank, Academics and Research Work. They can even upload papers published, Books published by them. Certifications, Seminars, Workshops and other activity details are also filled by them. They can view and update their details as well.

The staff can apply for leave on this system by filling the leave from online and then sending it to the HOD for approval. They can view their previous leaves taken in the load adjustment module, which views the entire leave details like the duration, reason, date and type of leave taken. The staff has to wait till the leave is sanctioned by the HOD and they come to know this, by accept or reject status which is notified to them whenever the HOD reacts to their application. Leave requests of staff can be accessed, reviewed and approved by HOD in real time. Alerts / notifications for acceptance and rejection of leave are provided. HOD can sanction / reject leave application by going through the previous leave status of the applicant. They do this by viewing the load adjustment module provided here. This helps the HOD to decide whether to sanction or reject the leave of the applicant. The HOD will be notified whenever a new application for leave arrives on their home page.

The upcoming events in the department can be notified to each and every staff and even the HOD on a common platform where both can see the event and make themselves aware about it. Dashboard provided here does this work, the HOD and staff can post the upcoming events on the dashboard. This post is seen by everyone. The previous posts can also be viewed, if it is missed by any staff they can get details about it. Each post remains on the dashboard for certain period. The detail of the post that is by whom it is posted can also be viewed. They can put their comments on the post and the comments again can be viewed by everyone.

Fig. 1: System Architecture
Flexible and reliable reports are generated in order to manage staff effectively. Customized reports can help the HOD in decision making process. Here the reports are generated as in when needed by the HOD. This module displays various options for generating customized reports based on their Experiences, Name/Address, Highest Performance and leave. HOD can get to know the entire details of its staff. For generating the reports the data will be fetched from the database and only that data will be retrieved for which the customized report has to be generated and the reports will be in a particular order.

Keeping track of the performance of the staff is of utmost importance to any organization. The staff performance analysis system helps to record staff performance details and analyze their performance over a period of time. Every semester, the staff has some targets or requirements to fulfill, all these criteria are entered in the system in the numeric value which is nothing but the score claimed by the staff.

The staff claims score in this system for performance analysis on following factors like: Lectures taken by them for that allotted subject in the particular semester, Examination duties. On the basis of this automated score will be generated by considering the above claimed scored. Papers published by them, Books, Conferences attended, seminars, workshops and for other activities if done an automated predefined score is generated if and only if proofs for the same are uploaded and entered by the staff. And their performance analysis is done by the graphs generated from the above scores. The graphs provide the graphical view of the performance of the staff. The HOD can view this graphs for each staff performance whenever needed. The staff can also view its graphical performance view and can analyze their performance. The staff can even see the best 5 performance views for that semester. So the staff can decide what all need to be done in order to improve the performance in next semester. The performance analysis module is implemented using K Means Clustering Algorithm. The staff data sets have been divided into different clusters using k-Means clustering method.

A. K-Means Clustering Method

The staff is been classified in 5 groups- Very High, High, Average and Very Low. K-Means Clustering method works on finding the cluster centers by trying to minimize objective function. After the cluster centers are determined, the evaluation data vector is assigned to their respective clusters according to the distance between each vector and each cluster center.

MySQL is the backend database of our web application. MySQL database is used in order to store the data of each and every staff. MYSQL is robust and provides excellent performance. It also occupies very less disk space.

IV. SYSTEM INTERFACE

A. Login Page

The main screen contains the login page. Staff and HOD can register and login into the system.

![Login Page]

**Fig. 2: Home Page**

B. Profile Page

The Staff and HOD can fill their entire profile details here.
C. Leave Application

The Staff can apply for leave by filling the form and then wait for the status of acceptance or rejection of leave from HOD.

D. Dashboard

The staff and HOD can post the upcoming events of the department on this dashboard.
E. Customized Report

Customized reports will be generated as per the requirements by selecting the particular options. As shown in the web page below here Date of joining is selected and on that basis the report of the staff is generated.

V. System Configuration

A. Software Requirements
- Operating System: Windows 7, 8
- Technology: Java Servlet, J2EE
- Web Technology: HTML, JavaScript, CSS, JSP
- IDE: LUNA Eclipse
- Web Server: Tomcat 7.0 Server
- Database: MySQL
- Java: J2SDK 1.7

B. Hardware Requirements
- Hardware: Pentium Dual Core
- Speed: 2.80 GHz
- RAM: 4 GB
- Hard Disk: 20 GB (minimum)
- Floppy Drive: 1.44 MB
- Keyboard: Standard windows keyboard
VI. CONCLUSION

By implementing the computerized staff management system it will help the department to manage their staff both quantitatively and qualitatively. Also, the system being an automated one aids in reducing various costs such as man power planning, staff information, work scheduling, performance analysis. At this juncture, the Staff Management System is an excellent tool for staff management as it facilitates in filling their profile details online, generating customized reports, posting upcoming events on the dashboard and doing performance analysis based on different parameters such as their experience, leaves status and designation.

The system has been designed at the maximum possible excellence. Still we accept drawbacks, as it is a human effort. The system can be made more user-friendly. The program is coded in more structured manner so we can include future enhancement. There is a scope for improvement of the system. Apart from these there is a scope for generating many more features like sending notification to staff members regarding any event or even if their leave reaches the threshold number. This module will contain notification by SMs. This software can be extended easily without affecting the functionality. There can be many more future enhancement and improvement in the Staff Management System.

REFERENCES